



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Sea currents are regarded as of greatest importance. The pronounced currents from the nearest land do not bathe the islands, but experiments have proved that heavy winds and storms will drive floating objects out of the main currents, and BÖRGESSEN believes the general conditions to be favorable to the introduction of algae from the west and north coasts of Ireland, the west coast of Scotland, and the Hebrides, while the currents from east Iceland run straight to the Faeröes. It is also possible that algae may be introduced from the west coast of Norway. Fragments of the algae may drift for many days, especially such as are provided with bladder-like floats, or their spores may be so carried, and floating pieces of timber covered with algal growths are known to travel long distances. Smaller algae of the littoral flora are very likely to be introduced with mud upon the feet and bodies of birds. Finally BÖRGESSEN believes that algae may be introduced through the shipping which visits the islands.

These are merely some of the most striking conclusions in an account that is full of interesting observations on the life conditions and habits of marine algae.—B. M. DAVIS.

#### Plant diseases.

FREEMAN has produced a finely illustrated volume on plant diseases,<sup>2</sup> the first part of which is devoted to a discussion of fungi in general, while the second special part treats of specific fungous diseases of plants. The object of this book, as set forth in the preface, is "rather educational than immediately practical." It is an attempt to give a general account of the nature of fungi, for the purpose of encouraging study on the part of farmers and horticulturists rather than the habit of dependence upon rules and formulae. On this account the scope of the work becomes rather broader than would be indicated by the title, *Minnesota plant diseases*.

The first part comprises a discussion of the morphology, physiology, and ecology of fungi; but, while this part contains much excellent material, the arrangement lacks the logical sequence of first importance in a book of an educational character. It consists rather of a series of interesting pictures without due regard to pedagogical principles. This is likely to leave the mind of the reader confused. The sub-headings of the first chapter on nutrition are as follows: What the fungi are; The fungus method of obtaining nutrition; How the nutritive method is expressed in structure; Parasitism and saprophytism; Storage organs; Fungus shoestrings or strands; Physiology of the mycelium. Then, in chapter III, Fungus life methods, we have as the first subhead, again, Parasitism and saprophytism, the rest of the chapter dealing with habits or rather habitats of different fungi. Too great an effort is made to avoid scientific terms. Thus we have such confusing combinations as "spore-like swimming-spore-cases," "Sac-spore-capsule." It would seem that the reader who can comprehend the allusions to the phylogenetic relationships between fungi and algae would not find it too difficult to comprehend a few scientific terms.

<sup>2</sup> FREEMAN, E. M., *Minnesota plant diseases*. Imp. 8vo. pp. xxiii+432. *figs.* 211. St. Paul: Report of the Survey. Bot. Ser. V. 1905.

The second part of the book is devoted to descriptions of special diseases. These are classified according to the nature of the crops on which they occur, as follows: Timber and shade trees; Field and forage crops; Garden crops; Orchards and vineyards; Greenhouse and ornamental plants; Wild plants. Under those heads the groups of fungi, as rusts, smuts, mildews, etc., are kept together.—H. HASSELBRING.

### Regeneration.

WITH THE TITLE *Studies in regeneration* NĚMEC<sup>3</sup> has published in rather voluminous form the results of his investigations on the regeneration of root-tips. The general conclusions may be briefly summarized as follows. Cutting a transverse section just at the tip results in the regeneration of a new tip in a radial manner. The dermatogen and outer part of the periblem takes no part in this, the new tissue arising from the inner part of the cortex and the plerome. There is first of all the formation of a callus of hypertrophied cells, between which and the meristem arises the group of initials by which the new root-tip is organized. This group is radial from the beginning, the majority of its cells arising from the plerome, only the peripheral ones coming from the periblem. Proceeding back from the tip, the capacity for regeneration diminishes from the periphery inwards, soon disappearing from the periblem. As long as the central cells of the plerome still possess this capacity the regeneration is radial. Farther back it is confined to the pericambium and cells of the periblem and plerome immediately adjoining, which give rise to a ring of meristem, out of which usually more than one root-tip arises. When the capacity of the inner cells of the periblem and the outer cells of the plerome to take part in regeneration is lost, the replacement of the removed root-tip occurs only through the origin of lateral roots, which arise in the pericambium.

When the root is cut through obliquely, the regeneration of the new root-tip occurs at the part of the cut surface nearest the tip. When the tip is slit lengthwise each half re-forms a new tip. If a tip is slit lengthwise for about 1<sup>mm</sup>, and then one of the halves is removed by a transverse incision, the remaining half regenerates a new half, and also, at the surface formed by the transverse cut, a new tip is developed. Lateral incisions to produce new roots must go at least half way through the plerome. Unless such an incision is made just back of the tip a new tip is soon organized immediately above the cut. The original tip is pushed to one side and finally is displaced entirely. When the incisions are made on two opposite sides of the root at different levels, new root primordia arise at each place, but only the one nearest the original tip continues to develop. If two incisions are made, on opposite sides and at the same level, a new root arises at each, but one is soon suppressed, while the other develops and finally replaces the original tip. About forty-eight hours after the wounding, starch usually appears in the cells of the periblem just above the cut. The grains are not yet

<sup>3</sup> NĚMEC, B., Studien über die Regeneration. Imp. 8vo. pp. 387. *figs.* 180. Berlin: Gebrüder Borntraeger. 1905. *M* 9.50.